

CLAIMS

**What is claimed is:**

1. An irradiation chamber comprising:
  - a rigid first plate having a first surface and a second surface said second surface having a raised boundary surrounding a plurality of raised partitions;
  - a rigid second plate having a first surface and a second surface, said second surface having a raised boundary surrounding a plurality of raised partitions;
  - wherein the second surface of said rigid first plate is contacted with second surface of said rigid second plate thereby forming a chamber; said chamber, defined by the raised boundary surrounding the plurality of raised partitions which extend from said second surface of said first plate and said second surface of said second plate, said chamber having a first port and a second port, wherein a plurality of channels are formed by said partition providing fluid communication with the first port and second port.
- 15 2. The irradiation chamber of Claim 1 wherein said partitions are essentially evenly spaced apart from each other.
3. The irradiation chamber of Claim 2 wherein the number of partitions 20 ranges from three to eleven.
4. The irradiation chamber of Claim 3 wherein the number of partitions is seven.
- 25 5. The irradiation chamber of Claim 2 wherein the channels form a serpentine fluid pathway providing fluid communications between said first and second port.
6. The irradiation chamber of Claim 5 wherein the first port is on the 30 first surface of the first plate.

7. The irradiation chamber of Claim 6 wherein the secondport is on the first surface of the second plate.

8. The irradiation chamber of claim 7, wherein the channel has a  
5 thickness of about 0.04 inches.

9. The irradiation chamber of claim 1, wherein the rigid first plate and second plate are made of a material that does not substantially absorb UV radiation having wavelength in the range of 180 to 420 nm.

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10. The irradiation chamber of claim 9, wherein the rigid first plate and second dplate are made of material selected from the group consistingof polycarbonate and acrylic.

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11. An irradiation chamber of claim 1 wherein said rigid first plate is identical to said rigid second plate.

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12. A method for forming irradiated blood components comprising:  
(a) collecting blood from a patient;  
(b) separating a desired component from said blood;  
(c) irradiating the desired component to form an irradiated blood product in an irradiation chamber comprising:

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a rigid first plate having a first surface and a second surface said second surface having a raised boundary surrounding a plurality of raised partitions;

a rigid second plate having a first surface and a second surface, said second surface having a raised boundary surrounding a plurality of raised partitions;

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wherein the second surface of said rigid first plate is contacted with second surface of said rigid second plate thereby forming a chamber; said chamber, defined by the raised boundary surrounding the plurality of raised

partitions which extend from said second surface of said first plate and said second surface of said second plate, said chamber having a first port and a second port, wherein a plurality of channels are formed by said partition providing fluid communication with the first port and second port; and

5 (d) collecting said irradiated blood product.

13. The method of claim 12 wherein the irradiated blood product contains cells that have been induced to undergo apoptosis by said irradiation.

10 14. The method of claim 12 further comprising contacting the desired component with a photoactivable agent and irradiating the desired component prior to irradiating said desired component to form an irradiated blood product.

15 15. The method of claim 12 further comprising returning the irradiated blood product to the patient.

16. The method of claim 12 further comprising washing the irradiation chamber with less than 1X volume of a fluid selected from the group consisting of saline, plasma or combinations thereof to displace any irradiated blood product 20 remaining in the irradiation chamber thereby forming a wash solution.

17. The method of claim 15 wherein the wash solution is returned to the patient.

25 18. A method of treating a patient comprising  
(a) collecting blood from a patient;  
(b) separating a desired component from said blood on a continuous basis;  
(c) contacting the desired component with a photoactivable agent;

(d) irradiating the desired component and the photoactivatable agent to form an irradiated blood product in an irradiation chamber comprising:

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a rigid first plate having a first surface and a second surface said second surface having a raised boundary surrounding a plurality of raised partitions;

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a rigid second plate having a first surface and a second surface, said second surface having a raised boundary surrounding a plurality of raised partitions

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wherein the second surface of said rigid first plate is contacted with second surface of said rigid second plate thereby forming a chamber; said chamber, defined by the raised boundary surrounding the plurality of raised partitions which extend from said second surface of said first plate and said second surface of said second plate, said chamber having a first port and a second port, wherein a plurality of channels are formed by said partition providing fluid communication with the first port and second port; and

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(e) returning the irradiated blood product to the patient.

19. The method of claim 17, wherein the desired component is buffy coat.

20. The method of Claim 17, wherein the photoactivatable agent is 8-MOP.

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21. The method of claim 17 wherein the desired component is buffy coat and the photoactivatable agent is 8-MOP.